

ALBA 540 FIVE-VALVE A.C. SUPERHET

CIRCUIT.—A five-valve superhet for A.C. mains and working on the usual medium and long wavebands.

Signals are fed to V1, the frequency through an inductively coupled bandpass filter, employing iron-cored coils. Coupling to V2, an H.F. pentode, is through an I.F. transformer, tuned to 117.5 kcs.; a second I.F. transformer is used to couple this valve to V3, a double diode. Both these transformers have iron-cored coils.

One diode of V3 is used for demodulation, and the other, which is coupled to the demodulator diode through a small condenser, C10, to supply A.V.C. bias, which is applied to the preceding valves in the orthodox manner.

The L.F. output of V3 is taken through a resistance and capacity stage, which incorporates the volume control, to the output pentode V4, and, after amplification,

to the moving-coil loudspeaker through a matching transformer.

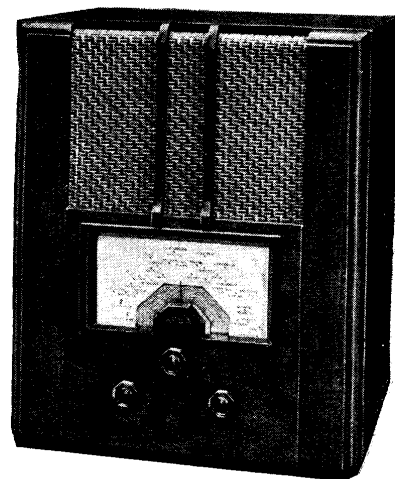
Connections are provided for a pick-up, which connects via the volume control to the grid of V4.

Mains equipment consists of transformer, full-wave rectifier, electrolytic condensers, and the speaker field.

Special Notes.—The dial light is rated at 6.2 volts .3 amp.; the holder is fixed to the pointer assembly by means of a spring clip and is easily removable.

Connections for an external speaker—which should have its own matching transformer—consist of two screw terminals on the internal speaker transformer.

Removing Chassis.—First remove the three control knobs, which are fixed by grub-screws, and free the tuning scale
(Continued on page 22.)



The Alba 540, made by A. J. Balcombe, Ltd. All diagrams and tables are on page 22.



I knew it could not be the Resistors. They are ERIE's, and I've never found a dud one yet. Anyway, the set's working like a lamb!

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(Continued from page 20.)

from the clips holding it to the front of the cabinet. Now remove four bolts from underneath the cabinet. The chassis can now be removed to the extent of the speaker leads which should be enough for all ordinary purposes. Should it be necessary to unsolder these leads, reconnection is as follows: red lead to F and 1 (already linked); black lead to 3; blue lead to lower F.

ALIGNMENT NOTES

I.F. Circuit.—Connect a modulated oscillator tuned to 117.5 kcs. to the grip cap of V1, and an output meter across the external speaker terminals; the meter should read about 1 volt and have a large series isolating condenser. Adjust T1, T2, T3, and T4 for maximum reading on the output meter.

Medium Waves.—Tune the receiver to 220 metres and inject a 220-metre signal at the aerial and earth sockets, and adjust T5 for maximum output; if two peaks are found, the correct one is that nearer minimum capacity. Trim T6 and T7 for maximum deflection.

Long Waves.—Inject and tune in a signal of 1,400 metres; rock the gang condenser and adjust T8 for maximum reading on the output meter.

QUICK TESTS

Quick tests are available on this receiver on the terminal strip on the speaker transformer. Volts measured between this and the chassis should be:—

Red lead, 300 volts, smoothed H.T.
Black lead, 280 volts, smoothed H.T.
Blue lead, 440 volts, unsmoothed H.T.

VALVE READINGS

No signal. Volume maximum, 200 volt A.C. mains.

V.	Type.	Electrode.	Volts.	M/a.
1	(All Mullard) FC4 Met. (7) ..	Anode .. Screen .. Osc. anode ..	265 75 80	1.6 3.5 2
2	VP4V Met. (7) ..	Anode .. Screen ..	265 265	14.5 6
3	2D4A Met. (5) ..	Diode ..	—	—
4	Pen.4VB (7) ..	Anode .. Screen ..	245 265	37.5 5
5	1W4 (4) ..	Filament	440	—

RESISTANCES

R.	Purpose.	Ohms.
1	V1 screen decoupling ..	50,000
2	V1 cathode bias ..	200
3	V1 osc. grid leak ..	50,000
4	V1 osc. anode decoupling ..	.1 meg.
5	V2 cathode bias ..	150
6	V1 and V2 A.V.C. decoupling ..	1 meg.
7	A.V.C. diode load (part) ..	300,000
8	H.F. filter ..	.15 meg.
9	Demodulator diode load ..	1 meg.
10	Volume control ..	.5 meg.
11	V3 and V4 cathode bias ..	150
12	A.V.C. diode load (part) ..	200,000

CONDENSERS

C.	Purpose.	Mfds.
1	V1 screen decoupling ..	.1
2	V1 A.V.C. decoupling ..	.1
3	V1 cathode bias shunt ..	.1
4	V1 osc. grid ..	.00015
6	V1 osc. anode decoupling ..	.1
7	V2 cathode bias shunt ..	.1
8	H.F. filter ..	.00015
9	H.F. filter ..	.00015
10	A.V.C. diode coupling ..	.00025
11	L.F. coupling ..	.005
12	Pentode compensating ..	.005
13	V4 cathode bias shunt ..	.25
14	H.T. smoothing ..	6
15	H.T. smoothing ..	6
16	Mains aerial ..	.00025

Alba 540: Above, component values; below, circuit diagram; at foot of page, chassis layouts.

